SYNOPSIS

ON

AN EMPIRICAL ANALYSIS OF SHARE BUYBACKS BY COMPANIES IN INDIA

(Submitted in lieu of partial fulfillment of Ph.D.)

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1. TOPIC OF THE STUDY

AN EMPIRICAL ANALYSIS OF SHARE BUYBACKS BY COMPANIES IN INDIA

2. INTRODUCTION

Competitive pressures, shareholders' demands, management decisions and regulatory and political environment, all warrant that companies keep on reinventing themselves and adapt to change. Operational, managerial and financial dimensions may therefore, often be subject to restructuring. In particular, financial restructuring plays a pivotal role in strengthening the firm's financial position as well as generating value for shareholders. A company may undertake financial restructuring through various modes such as merger and acquisition, takeovers, spin offs, leverage buyout, ESOP etc. Buyback is one of the significant strategies of financial restructuring. The procedure by which a company purchases its own securities from the market is termed as buy back of shares. Buyback is defined by BSE website, *"Buyback is a corporate action in which a company buys back its shares from the existing shareholders usually at a price higher than market price. When it buys back, the number of shares outstanding in the market reduces".* Mishra (2005) defined share buyback as reverse of issue of equity shares. The term 'Buyback' has become buzzword in the financial market. Since the advent of share buyback in India in 1998, companies have invested more than Rs. 2.5 lakh crore in repurchasing shares, indicating that the share buyback environment in India is rosy.

Every restructuring decision carries with itself a strong signal to various interest groups and buyback is one of them. A buyback is a very significant event in the lifespan of a business which brings both short-term and long-term changes. The short-term impact may be seen in terms of stock price movements when news of buyback breaks out (Reddy *et al.*, 2013; Hyderabad, 2009; Agarwalla *et al*., 2015; Kuntluru and Chacko, 2019). The long-term impact of buyback gets reflected through the accounting performance of companies in the coming years (Evans and Evans, 2001; Lie, 2005; Gupta, 2016). Buyback has been popular in India due to a variety of reasons. Primarily, signaling is the most prominent explanation for a company to undertake share buyback whereby it attempts to correct the market price of shares and inform the investors about the strong fundamentals of the companies (Vermaelen, 1981; Dittmar, 2000). Besides it, a firm opt the option of buyback to elevate the earning per share, to reach the optimum leverage ratio, to increase the promoter's holding, to distribute the excess idle cash, to take tax advantage by using it as a substitute of dividend payout, as a takeover deterrence (Thein, 2013; Agarwalla *et al.*, 2015; Arora, 2019; Jena *et al*, 2018;

Dayanandan *et al.,* 2020). Academicians have shown keen interest in buyback of shares as it acts as a double edged weapon. On the on hand, it initiates a market correction and enables distributing excess cash to shareholders, while on the other hand provides an opportunity to the investors with perceived overvaluation to exit from the company.

The USA was pioneering country to allow companies to buy its own shares in early 1960s as an alternative payout method (Grullon and Michaely, 2002) and as a tool of corporate finance it gradually spread to U.K., European countries and in Asian countries in late 1990s. With the amendment in Companies Act, 1956 and new SEBI Regulation, 1998 companies in India were allowed to buyback their shares (Khan and Jain, 2014). In India, share repurchases tend to be conducted through any of these two methods: (a) open market repurchases through book-building and the stock market process, or (b) a tender offer in which buybacks can be done from the existing shareholders on a "proportionate basis" (Dayanandan *et al.,* 2020). There has been a spate of announcement of buybacks in India since 1998. With just one buyback announcement made in 1998-99, it has tremendously increased to 603 till 2020-21 (prime database). Share buyback has been a polemic issue. Most of the studies on share repurchases are restricted to developed economies only especially U.S.A., Canada and U.K. In India, there is limited research on share buyback and those too provide contradictory results. So, the proposed study is undertaken to find answer of the several questions such as: what are the reasons for share buyback, what are the results of share buyback programs as far as stock price and firm financial performance are concerned.

3. REVIEW OF LITERATURE

In order to advance any expanding discipline, re-examining current literature is required (Cooper, 2010). Efforts have been made to lay down a firm foundation related to various aspects that is relevant for getting domain knowledge about the field and to find out the gap for future research. There is extensive literature available which covers the aspects like short-term impact on stock price, post buyback operating and financial performance, factors influencing and motivation of buyback process, effect of buyback on promoters' stockholding and on liquidity of company and so forth.

After analyzing the various relevant articles, the review has been categorized along the following themes:

A. Determinants of Share Buyback Decisions
B. Impact of Share Buyback Announcement on Stock Performance

C. Share Buyback and Firm's Performance

All this is followed by literature gaps to provide an insight into future possibilities of studies.

A. Determinants of Share Buyback Decisions:

Why do firm repurchase shares? The extensive literature on share buyback proposed many hypotheses that drive the companies to undertake share buyback. Literature provides evidences that firms generally buyback their shares when the share price is undervalued; to signal the future improvement in financial health; to mitigate the dilutive effect of share option; when profitable opportunities are not present and firm have an excess level of cash; to prevent it from the hostile takeover; to distribute cash as a substitute of dividend; as an adjustment of capital structure and so on (Dittmar, 2000; Reddy *et al.*, 2013; Yarram, 2014; Jena *et al*., 2018; Vermaelen, 1981; Arora 2019; Hyderabad, 2013; Bagwell, 1991). In the prior studies, the motivations affecting buyback decisions have been gauged from the financial of the firms taking such decisions. Following factors have been identified which impacts the buyback decision of the company:

1. Signaling Hypothesis: The signaling hypothesis is based on the premise that information asymmetry between the firm and the investors may cause a firm to be undervalued (Vermaelen, 1981). Hence, the firm engage in buyback activities which are generally at a premium to convey the signal that share price is undervalued (Dittmar, 2000). The market considered the buyback as 'good news' and announcement leads to a positive reaction in the share price (Hyderabad, 2009; Mishra, 2005; Agarwalla *et al*., 2015; Gupta, 2017). From the existing works of literature the following firm-characteristics are identified which are used to analyse the impact of these parameters on the firms' decision of buyback:

- Earning to Price Ratio
- Price to Book Ratio
- Firm Size
- Stock Return

The price to book ratio is expected to have a negative influence on the share buyback decision while earning to price ratio has a positive influence on buyback decisions (Dittmar, 2000; Jena *et al.*, 2018; Arora and Pasricha, 2012; Yarram, 2014).

In the Indian environment, the signaling hypothesis is one of the most dominant factors affecting the buyback decision (Arora 2019, Arora and Pasricha, 2012). Jena *et al.* (2018) in

their study observed that firms were potentially undervalued (having higher earning to price ratio) at the time of share buyback and concluded that undervaluation is one of the dominant factors affecting the buyback decisions. Similar results were obtained by Arora and Pasricha (2012). On the contrary, Arora (2019) measured the undervaluation by the market to book ratio and by using regression analysis observed that there was a statistically significant negative relationship between the repurchase and market to book ratio. Previous literature considered the signaling hypothesis as the most dominating factor affecting share buyback decisions (Reddy *et al.*, 2013; Vermaelen, 1981; Arora, 2019; Arora and Pasricha, 2012).

2. Leverage Hypothesis: The leverage hypothesis postulates that maintaining a target capital structure works as a major motivation for undertaking buyback (Dittmar, 2000; Yarram, 2014; Jena *et al*., 2018). Firms are more likely to buyback their shares if their actual debt to equity ratio is less than the targeted ratio (Jena *et al.*, 2018; Yarram, 2014). Following firm characteristics have been used by the researchers to measure leverage:

- Debt to Equity Ratio
- Long-Term Debt to Equity
- Long-Term Debt to Total Asset
- Debt to Total Assets Ratio

Various researches evidenced that the leverage hypothesis is one of the important factors affecting the buyback decisions while others do not support it. Varma and Munjal (2016) observed that repurchasing companies are characterized by lower financial leverage than non-repurchasing companies and found evidence of supporting the leverage hypothesis in the Indian context. On the contrary, Arora and Pasricha (2012) and Jena *et al*. (2018) found leverage hypothesis as the least important factor affecting the companies going for buyback.
Jena *et al.* (2018) attributed this to the prohibition by Company Act, 2013 to use the borrowed fund for share buyback in India. However, there is strong evidence in favour of leverage hypothesis in developed countries due to different legal framework (Chen, Harper and Iyer, 2018; Yarram, 2014).

3. Free Cash Flow Hypothesis: The free cash flow hypothesis predicts that a firm tends to exercise share buyback when it is having an excess level of free cash flow than its investment opportunity in order to mitigate agency cost caused by the free cash flow surplus (Jensen, 1986). Hence, a firm is more likely to buyback its share if both excess cash flow and low

investment opportunities are present with it (Jena *et al.*, 2018). Following variables have been used to measure free cash flow and investment opportunity:

- Cash and Cash Equivalent to Total Asset
- Operating Cash Flow to Total Asset and
- The investment opportunity is calculated by the market value of the asset to the book value of the asset.

Prior studies are evidenced in the support of the free cash flow hypothesis (Jena *et al.*, 2018; Hyderabad, 2013). Jena *et al.* (2018) found that companies with excess cash and low investment opportunities are more likely to distribute the excess cash through buyback of shares. According to Arora and Pasricha (2012), the availability of surplus cash was the second most determining factor affecting buyback decisions. While Arora (2019) and Varma and Munjal (2016) revealed negative relationship of level of cash with share repurchase, which is not consistent with the free cash flow hypothesis.

4. Earning Management Hypothesis: Earning management is defined by Healy and Wahlen (1999, p. 368) as "*earnings management occurs when managers use judgement in financial reporting and in structuring transaction to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers*". Buyback of shares is a cushion to manage earnings by the executive as they reduce the number of shares outstanding without any change in earnings which provides a favorable EPS to shareholders. It has been seen that managers are extremely concerned about Earning per share dilution and shareholders take EPS as a measure of profitability judgment. Thus, it suggests the 'earning management hypotheses' as the real motivation for undertaking such a decision of buyback. The basic idea behind this is to manage the level of reported earnings per share post buyback at a certain high level which is as per the investors' expectation.

Following variables are used to by the researcher to test the earning management hypothesis:

- Change in EPS
- Change in Return On Capital Employed

Any abnormal change in the profitability influences the likelihood of share buyback (Jena *et al.*, 2018). Under the Indian scenario, earning management hypothesis is not considered as an important determinant for buyback decision as documented by Arora and Pasricha (2012) and Jena *et al.*, (2018).

5. Corporate Governance Hypothesis: The corporate governance hypothesis asserts that quality corporate governance is associated with effective monitoring the activities of firms and this may prevent repurchase decisions unless the firm has strong reason to believe that repurchase will increase firm value (Wu, 2012). As there is information asymmetry between the insiders (managers) and outsiders (shareholders), there is more probability of windfall gain of insiders by timing the repurchase. Thus, effective corporate governance mechanisms may help mitigate such fears by investors and other market participants. Various corporate governance-related variables have been identified which are used to determine the influence of these factors on share buyback decisions such as:

- Board Size
- Board Independence
- CEO Duality
- Ownership structure

Prior studies highlighted that board size has a positive influence on buyback decisions as large boards are less likely to be manipulated compared to small boards (Yarram, 2014). A positive relationship has been identified by Yarram (2014) and Jena *et al*. (2018) between board independence and repurchase decisions. In a study conducted in Sweden by Jansson and Olaison (2010) impact of a set of firm-level corporate governance variables (such as ownership structure, differential voting rights and cross-listing of share) on share buyback behavior is explored. The study revealed that variation in corporate governance arrangement impacts the share buyback.

6. Substitution Hypothesis: The substitution hypothesis indicates that firms make share buyback as a substitute payment method for dividends (Dittmar, 2000). The Dividend Irrelevancy theory propounded by Miller and Modigliani (1961) implies that share repurchases and dividends are perfect substitutes to each other, conditional upon perfect capital markets. Following parameters are used to examine the influence of dividend substitution on the buyback decision:

- Dividend Payout Ratio
- Dividend Yield

The primary cause for the substitution hypothesis is the different tax structure applicable to dividend paid and buyback in the hands of shareholder (Dittmar, 2000; Alquhaif *et al*., 2020) There is no visible tax advantage in share buyback for Indian investors (Jena *et al*., 2018). As

a result, the substitution hypothesis doesn't work in the Indian environment (Varma and Munjal, 2016; Arora, 2019). While Arora and Pasricha (2012) found a negative relationship between dividend payout ratio and buyback decision. Jena *et al*. (2018) shows a complementary relationship between repurchase and dividend payment similar to Dittmar (2000), Varma and Munjal (2016), Arora (2019), Hyderabad (2013).

7. **Takeover Hypothesis:** All the previously mentioned hypotheses are reflected in the internal firms' decisions that affect the company and its shareholders. Nevertheless, managers may employ share buyback decisions to affect the relationship between the company and outsiders (Dittmar, 2000).

According to this hypothesis, firms that are at higher risk of becoming takeover target are more likely to repurchase stock as this action provide support to sagging share price and thereby deter unwanted takeover attempt (Bagwell, 1991). Thus, share repurchase decisions are taken by the firms as a defensive strategy to prevent the hostile takeover. In India, Arora and Pasricha (2012) documented that 'takeover deterrence is not considered as a crucial determinant for buyback decisions'.

The extensive review of literatures insights the various factors influencing the firm repurchase decisions and these factors differ from country to country depending on institutional framework of share buyback in a particular country. There is not a single factor which affect the firm decision as these factors are not mutually exclusive and hence some researchers examined the effect of these all hypothesis simultaneously on share buyback decisions (Dittmar, 2000; Yarram, 2014; Jena *et al*., 2018; Arora and Pasricha, 2012; Varma and Munjal, 2016). There is extensive literature on this aspect of buyback in developed countries while in India limited studies has been done and provide contradictory results regarding these hypotheses in Indian environment.

B. Impact of the Share Buyback on Stock Performance:

The essence of the impact of buyback announcements on stock performance lies in the signaling hypothesis which posits that share buyback announcements are used by the firms to signal some information (Vermaelen, 1981). The general signaling is market undervaluation (Mishra, 2005; Hyderabad, 2009; Reddy *et al.*, 2013; Vermaelen, 1981) and they also emphasized the signaling hypothesis as one of the justifications for abnormal return. Several researchers have examined the relationship between abnormal return and share repurchase

process by using event study methodology to know the impact of buyback on the market. Various empirical studies carried out to investigate the impact of buyback announcement on the share price in India, have reported a positive market reaction to buyback announcement in the form of increasing AAR and CAAR of the firms in post event period of the announcements (Mishra, 2005; Hyderabad, 2009; Reddy *et al.*, 2013; Agarwalla *et al.*, 2015; Gupta, 2017; Pradhan and Kasilingam, 2019; Varma and Munjal, 2016; Gupta, 2018; Kuntluru and Chacko, 2019). However, a few studies revealed that there is the only short-term impact on share price which is temporary (Mishra, 2005; Hyderabad, 2009; Pradhan and Kasilingam, 2019). Varma and Munjal (2016) observed abnormal returns only on date of announcement. They found abnormal returns disappeared after that as information is quickly subsumed in the share price and thus the market is witnessing informational efficiency. On the contrary, Chatterjee and Mukherjee (2015) and Rane (2019) documented that there is no abnormal return from the announcement of buyback of shares in the market. They concluded that share buyback announcement does not create any shareholder value in the short run. Thus, the numerous research studies conducted in India provided the contradictory results and the debate remains inconclusive whether share buyback announcement helps in maximization of shareholder's wealth in form of increased share price or not.

Besides it, several studies have been conducted to analyze the long-run (from a period of more than 1 year up to 5 years) performance after repurchase announcements in foreign countries showing the significant excess return in the long-run (Vermaelen, 1981). However, in India, the study by Agarwalla, Jacob and Vasudevan (2013) and Agarwalla *et al.* (2015) reports that buyback 'does not create value for the long-term'. Hence, abnormal returns in the Indian market are reported as a short-term phenomenon.

From the available literature, factors affecting announcement returns are described as follows:

1. Type of offer: Hyderabad (2009) and Gupta (2017) examined the relationship between the method of buyback used and the extent of stock return. These researchers revealed that an open market repurchase offer has greater signaling ability than a fixed tender offer. Contrary to it, Agarwallalla *et al.* (2015) and Mishra (2005) observed that during the period of the announcement, abnormal returns are highest for tender offers than the open market purchase method. Agarwalla *et al.* (2015) documented a 13.7% abnormal return for the tender offer while only 5.3% for open market repurchase.

2. **Nature of industry:** Various studies have examined the effect of the nature of the industry on the market reaction to buyback. The findings suggest that the effect of buyback announcement has not been the same across all the sectors. Chatterjee and Mukherjee (2015) categorized the companies in service and non-service organizations and observed that for service sector companies the negative abnormal returns are less as compared to that of the non-service sector. Similarly, in a study conducted by Reddy *et al*. (2013), it is conferred that the service sector repurchases firms outperformed the industrial sector. Pradhan and Kasilingam (2019) analyzed the BSE 500 index firms industry-wise and found that buyback of shares affect the share price of the healthcare industry, FMCG, chemical and finance industry but it does not apply to other industries such as agriculture and transport. The study also highlighted that only the FMCG industry creates value for the shareholder. As opposed to it, Gupta (2017) and Pradhan and Kasilingam (2019) documented that nature of industry does not have any association with the presence of abnormal returns.

3. Size of the firm: Size of the firm as measured by market capitalization is shown to have a negative correlation with the realized return as surveyed by Chatterjee and Mukherjee (2015). The study concluded that mid-cap companies have shown some increase in post-announcement return as compared to small and large companies. On the contrary, Agarwalla *et al.* (2015) concluded that small firms have significantly more market responses than large-capitalization firms.

4. Size of buyback: Chatterjee and Mukherjee (2015) analyzed whether AARs vary with the size of the buyback. The researcher categorized the firms as 'small' if having share buyback amount as a percentage of paid-up capital and free reserves within 10% otherwise 'big'. The study revealed no significant difference in pre and post announcements returns of either of the categories.

C. Share Buyback and Firm's Performance:

Only handful studies have been conducted depicting the impact of share buyback on firm's financial/accounting performance in the Indian and foreign context. Researchers have proposed two justifications for the improved financial performance of the companies after share buyback. While Vermaelen (1981) documented that buyback is an attempt by the managers to signal future growth or improvement in the financial health of an enterprise; Grullion and Michaely (2004) considered the share buyback as investment in one's own firm

and stated that managers are likely to announce a buyback when they foresee improvement in the operating performance.

Existing literature has used different financial indicators to measure the change in financial and operating performance of the companies after the share buyback such as EPS (Mishra, 2005; Ramesh and Rane, 2013; Evans and Evans, 2001; Gupta 2016 and Shaw and Rakshit, 2017; Zhong, Wen and Zhong, 2017), Return on Equity (Evans and Evans, 2001; Bukalska, 2015; Gupta, 2016) Return on Capital Employed (Gupta, 2016), Return on Asset (Agarwalla *et al*, 2015; Zhong *et al.*, 2017; Evans and Evans, 2001), Current Ratio and quick ratio (Dhanda and kaur, 2014; Gupta, 2016, Zuang *et al.*, 2017) etc.

Gupta (2016) conducted a comprehensive study to measure the financial and operating performance of 128 buyback companies during 2000-2012 and observed that financial performance of companies showed increasing trend in post buyback period while operating performance declined. While Dhanda and Kaur (2014) reported improvement in operating efficiency by analyzing pre and post liquidity performance of company. Zhong *et al.*, 2017 revealed that there is improvement in profitability, solvency and operational capacity after the share buyback. Evans and Evans (2001) analysed the profitability of companies and stated that performance of repurchasing companies fails to significantly improve in post announcement period. Some operating performance improvement was observed in the first year after by buyback in case of tender offer by Agarwalla *et al*. (2015) while most of key operating performance indicators shows statistically decline during 2 to 3 years after share buyback.

There are inconclusive results obtained from the existing studies regarding the improvement in firm's performance in post buyback period. Some have found positive post performance (Gupta, 2016; Zuang *et al.*, 2017; Dhanda and Kaur, 2014; Lie , 2005), some have found it to be negative (Agarwalla *et al.*, 2015; Shaw and Rakshit, 2017; Evans and Evans, 2001; Gupta, 2016) yet some others have come up with mixed results, stating improvement in some indicators and deterioration in others (Gupta,2016; Agarwalla *et al*., 2015).

4. LITERATURE GAPS

Share buyback is a recent phenomenon in India. There have been extensive studies available on various facets of share buyback in developed economies. However, due to difference in legal framework regarding compliance of provisions of buyback, the results from foreign

studies can't be generalized to emerging economies. There is limited research available on share buyback in Indian context and these studies are inconclusive due to contradictory results. So, there is dire need to study the different aspects of buyback in Indian context to contribute to the available research.

Based on the review of literature, following gaps are identified, which can be explored for further research:-

- Only a few researchers have studies the phenomenon of share buyback announcements in India.
- Studies evaluating impact of buyback on share price have produced conflicting results. Further studies are required to establish more conclusive results.
- A comparison of pre-buyback and post-buyback financial performance is not much explored in Indian context.
- There is dearth of literatures available on identifying determinants of buyback decisions for Indian firms.
- There is hardly any work available on impact of corporate governance on share buyback decisions in India.

5. RESEARCH OBJECTIVES

Following are the main objectives of the present study:

- To identify and investigate the fundamental determinants of recent buyback decisions of Indian companies.
- To evaluate the impact of share buyback announcement on stock performance of share repurchase companies in India.
- To compare pre-buyback and post-buyback financial performance of concerned companies.

6. SIGNIFICANCE OF STUDY

The present study would focus on impacts of share buyback event on stock prices and compare the pre and post financial performance of the companies. Tracing of stock price movements is of significant use for the stock market investors and investment managers to better plan their investments. It is also important for market regulator in order to keep a check

on insider trading practices. Evaluation of accounting performance provides an insight for the businesses so that they can make prudent decisions. As the existing literature remains inconclusive over the effectiveness of share buyback as a tool of financial restructuring, the study will further help in providing some more evidences for deciding the issue and will help in promoting further research. Overall, this study will explore the different facets of share buyback and post buyback effect and observe whether share buyback in India are consistent with the theories of buyback. Thus, this study will be useful for corporate organizations, financial analysts and financial advisors in unfolding the possible consequences of buyback decisions.

7. RESEARCH METHODOLOGY

Objective-wise proposed research methodology is mentioned henceforth-

- To identify the factors affecting the buyback decision, a list of financial variables with potential ability to explain the hypotheses will be selected from the existing literature. Then, to empirically test the relation between firm-specific characteristics and buyback decisions appropriate methodology will be used as per the need of the study. Tentatively followings independent variables has been identified which will be used in proposed study:
    - Dividend Payout Ratio
    - Book value to Market value
    - Debt equity Ratio
    - Earning per share etc.

      This is an indicative list of variables, which is subject to change as per the requirement of the study.

- For the purpose of assessing the stock price reaction to the announcement of buybacks event study methodology will be employed. The crux of the event study is to find the abnormal return generated due to the price fluctuations encountered by the scrips on the occurrence of the event. It exploits the fact that, given rationality in the market place, the effect of the event will be reflected in the share prices. In the present study, tentatively a third variant of event study methodology, i.e. Risk-adjusted returns model of calculating abnormal returns is proposed to be used taking cue from Fama and MacBeth (1973) and Fama (1976). Estimation period of 200 days (t-230 to t-30)

and observation period of 30 days before and 30 days after buyback (t-30 to t+30) would be taken, taking hint from Hyderabad (2009) and Chatterjee and Mukherjee (2015). Stock returns on daily basis would be calculated based on closing prices and average abnormal returns on daily basis are calculated. Using this, cumulative average abnormal return is computed and t-test is to be applied to see the significance level. Tentatively following formulas would be used to calculate the abnormal returns, commulative average avnormal return etc.

The expected return for a particular day t is computed as follows:

$$\hat{R}_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$

Where, α_i = normal return of security i when R_{mt} is 0

β_i = measure of risk of security i

R_{mt}= Return on market index

The abnormal return (AR) on security i on day t is to be computed using this formula:

$$AR_{it} = R_{it} - \hat{R}_{it}$$

Where, R_{it} = actual return on security i on day t

$\hat{R}_{it}$= expected return on security i on day t

Daily abnormal returns are to be calculated for each company separately over a period of t= -30 to t= +30.

After this, daily abnormal returns have been averaged over N companies for each day t is to be computed as follows:

$$AAR_t = \frac{\sum AR_{it}}{N}$$

Where, AAR_t= Daily average abnormal return on day t

N = Number of companies

Further, cumulative average abnormal returns (CAARs) are to be computed by summing up the AARs over various time intervals. After this, significance of CAAR is to be found using following test statistic:

Test of significance of cumulative average abnormal returns = $\frac{\sum_{t_1}^{t_n} AAR}{\delta_{AAR_t}} * \sqrt{N}$

Where, δ_{AAR_t}depicts the standard deviation of AAR over the estimation period (t= -200 to t= -31).

- For analyzing the financial performance, various parameters have been used in existing literature, such as cash flows, accounting ratios etc. Accounting ratios are generally considered more comprehensive measures to evaluate the performance of the companies from different perspectives such as, operating efficiency, solvency and profitability. Following accounting ratios are tentatively used in the present study and varies according to suitability and availability of data:-
    - For measuring profitability position, Net Profit Ratio and ROCE ratio, Return on Net Worth, EPS etc. are calculated.
    - For measuring liquidity, Current Ratio and Quick Ratio are calculated.

  After comparing the values of different ratios pre and post- buyback, an assessment would be made as what changes take place in profitability, liquidity etc. of companies because of buyback announcements and the significance of change would be monitored using appropriate tests.

Sample Selection and Data Collection

- **Sample and period of study**: The study will include buyback by Indian corporates in 10 years span. The exact period would be finalized later so as to best suit the requirement of the research work.
- **Type of data:** The data collected for the study would be secondary in nature.
- **Statistical tools:** Descriptive Statistics, T-Test etc. techniques will be used in the study. Apart from these techniques, if any other statistical technique is found suitable during the course of research then it will also be used.
- **Sources of data**: Primary source of data would be CMIE Prowess data base. Along with this data would be taken from SEBI, BSE and NSE websites, annual reports of the companies, journals, textbooks etc.

8. ORGANISATION OF THE STUDY

The tentative chapter scheme of proposed research work is as under:

- **Chapter 1 : Introduction**

  This chapter would include an introductory explanation of Share Buyback.
- **Chapter 2 : Review of Literature**

  This would include a detailed review of available literature in the field of share buyback in order to find out research gaps.

- **Chapter 3 : Research Methodology**

  This chapter would comprise of research objectives, research design, research questions, hypotheses, sample size, nature of data, technique of data collection, technique of statistical analysis etc.
- **Chapter 4 and 5 : Analysis and Interpretation of Data**

  This chapter would discuss in detail the analysis of data and its interpretation according to the objectives of the study.
- **Chapter 6 : Conclusions and Recommendations**

  This chapter would summarize the findings of study, along with the limitations and scope for future research.

Towards the end of the research work, comprehensive Bibliography on the subject and some Appendix will be provided.

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Signature of Supervisor Signature of Candidate

(Prof. Deepa Mangala) (Parul)

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Signature of Director

(With Official Seal)